ABSTRACT

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Title of diploma thesis: Yield stress of semisolid preparations

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The diploma thesis deals with rheological properties, particularly yield stress, of pharmaceutical semi-solid excipients and preparations. The theoretical part summarizes the research knowledge of rheological behaviour of semi-solids, specifically yield stress, and it also describes selected materials. In the experimental part the rheological properties of semi-solid excipients were measured using the Kinexus pro + rheometer at 25 ° C and the results were subsequently evaluated by the rSpace software. The flow and viscosity curves were determined by the *Toolkid_V001 Shear Rate Table* at range of 0.1-100.0 s^{-1} and plotted by the *Power law model fit*. The course of these curves shows non-Newtonian behaviour exhibiting a plastic flow. The yield stress was measured by sequence *Viscometry_0002 Shear stress ramp* at the shear stress range 0.1-100/300 s^{-1} and evaluated by the *Yield stress analysis*. Adeps lanae revealed the lowest value of yield stress, Cremor leniens had the highest value yield. The used test seems to be suitable for comparison of flow properties of semi-solid excipients and preparations.

Key words: Viscosity, rheometr, semi-solids, yield stress, flow curve, viscosity curve.